

LONGEVITY OF WEED CONTROL IN CONTAINERS WITH BAS659

R. P. M. Atwood, University of Warwick, UK; L. C. Walker and J. C. Neal, North Carolina State University, and C. A. Judge, BASF Corp, Research Triangle Park NC

ABSTRACT

Nursery crop producers rely upon preemergence herbicides applied every 8-10 weeks; yet, even with this frequent herbicide treatment regime, weeds emerge and must be removed by supplemental hand weeding. Prior research has demonstrated that the half-life of preemergence herbicides is generally shorter in container nurseries than in field soils. Furthermore, longevity of weed control in containers depends upon the herbicide used and the weed species present. Recent research has shown that a granular combination dimethenamid-p + pendimethalin controls many common nursery weeds however, the longevity of weed control in containers has not been evaluated. An experiment to determine the longevity of weed control in containers with BAS 659H 1.75G (0.75% dimethenamid-p + 1% pendimethalin) compared with industry standards was conducted at Castle Hayne Research Station, NC. Pots were filled with pine bark + sand substrate on 9 May 2007 then treated on 8 June 2007 with 3 lb ai/A OH2, 5 lb ai/A Snapshot TG, 0.38 lb ai/A Broadstar, and 1.75, 2.6 & 3.5 lb ai/A BAS 659H. Five weed species, hairy bittercress (*Cardamine hirsuta*), eclipta (*Eclipta prostrata*), large crabgrass (*Digitaria sanguinalis*), spotted spurge (*Chamaesyce maculata*) and doveweed (*Murdannia nudiflora*), were surface seeded 0, 4, 6 and 8 weeks after treatment; each species and seeding date in separate pots. Treatments were arranged in a randomized complete block design with 4 replications with 3 pots of each species per experimental unit. Visual ratings of the overall % weed control were recorded every two weeks after treatment using an abbreviated percent scale of 0 to 10, where 0=no injury and 10 = dead plants (100% control). Data were subjected to ANOVA and means separation by seeding date and rating date. Additionally data were fit to a logistic non-linear regression model and number of weeks above 80% control was estimated from the resulting regression equations. When seeded the day of treatment, all treatments except the lowest rate of BAS659 provided at least 94% control of all weed species tested. Weed control decreased over time for all species and treatments except bittercress control with OH2. OH2 provided about 8 weeks of >80% bittercress control whereas other treatments provided less than 4 weeks. Eight weeks after treatment the two higher rates of BAS659 provided superior control of doveweed and spurge; and the high rate of BAS 659 provided significantly better control of crabgrass and eclipta compared to the other treatments. These data suggest that, compared to industry standard herbicides, BAS659H may provide longer residual control of spurge, crabgrass, doveweed, and eclipta in containers. However, OH2 provided longer residual control of bittercress under the same conditions.

Citation: Atwood, R.P.M., L.C. Walker, and J.C. Neal. 2008. Longevity of weed control in containers with BAS659H. Proc. Northeastern Weed Sci. Soc. 62:26